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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,847	02/20/2004	Hirohito Yoneyama	TAYO-17/32740	7515

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EXAMINER	
YAMNITZKY, MARIE ROSE	
ART UNIT	PAPER NUMBER
1774	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/783,847	YONEYAMA ET AL.	
	Examiner	Art Unit	
	Marie R. Yamnitzky	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5 and 6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5 and 6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *rec'd 20 Feb 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. This Office action is in response to applicant's amendment received November 13, 2006, which amends claims 1-3, 5 and 6, and cancels claim 4.

Claims 1-3, 5 and 6 are pending.

2. Claims 1-3, 5 and 6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention.

The specification provides insufficient guidance to be able to determine, without undue experimentation, the scope of polymer charge transport materials that satisfy Expressions (1) and (2). The specification provides insufficient information to enable one of ordinary skill in the art at the time of the invention to make the claimed device, wherein the polymer charge transport material is selected based on its ability to satisfy the relations of Expressions (1) and (2), without undue experimentation. Insufficient information is provided even in the case of claims 5 and 6, which provide a general formula for a portion of the material (in the case of claim 5) and a general formula for the material (in the case of claim 6).

The specification discloses hundreds of potentially usable polymer charge transport materials but, based on the teachings in the first paragraph of page 66, not all polymers having the disclosed formulae will satisfy Expressions (1) and (2). The specification teaches that whether polymers of the disclosed formulae satisfy Expressions (1) and (2) depends on synthesis method and synthesis conditions. The specification does not provide any specific examples of

synthesis methods and conditions which provide polymer charge transport materials that satisfy Expressions (1) and (2). The specification provides four device examples, each utilizing a different polymer charge transporting material that is said to satisfy Expressions (1) and (2), but the synthesis methods/conditions by which these four polymer materials were made are not disclosed. Even if one were to make a polymer having a partial structure as in claim 5 and represented by a formula as in claim 6, if the resultant polymer did not satisfy Expressions (1) and (2), one would have to undergo undue experimentation to determine the alterations necessary to provide a polymer that satisfies Expressions (1) and (2).

3. Applicant's arguments filed November 13, 2006 have been fully considered but they are not persuasive.

Applicant argues that the teachings on page 66 of the specification that are referenced by the examiner are "intended to remark only in general terms that the purity of the product obtained may vary depending upon synthesis methods and conditions."

Applicant also refers to the teachings on pages 5-7 of the specification and argues that "it would be evident to one skilled in the art that improving the purity of the charge transport material...leads to the present invention."

Applicant argues that "one skilled in the art would easily learn that materials satisfying Expressions (1) and (2)...can be obtained by eliminating impurities that affect the carrier (charge), in accordance with known synthesis methods and without undue experimentation."

Applicant further argues that it is a matter of common knowledge to eliminate impurities by known methods.

Applicant argues that given a specific polymer charge transport material, it can be easily determined whether the material satisfies Expressions (1) and (2); that undue experimentation is not required to determine whether a certain polymer is within the scope of the invention.

The examiner notes that there is no mention of purity in the first paragraph on page 66. While synthesis method and conditions can affect purity, synthesis method and conditions can also affect other characteristics such as weight average molecular weight, number average molecular weight, molecular weight distribution, and identity of terminal units. It is not clear from the original disclosure that the teachings in the first paragraph on page 66 mean that whether the hundreds of potentially usable polymers that are disclosed in the specification actually satisfy Expressions (1) and (2) is dependent upon the purity of the polymers. Further, the examiner finds no clear teachings in the specification as a whole that it is the purity of a polymer charge transport material that affects whether the polymer meets Expressions (1) and (2). Presuming for the sake of argument that purity does play a role, it is not clear that purity is the sole factor affecting whether a polymer charge transport material meets Expressions (1) and (2).

With respect to the issue of determining whether a certain polymer meets Expressions (1) and (2), the examiner does not disagree that a specific polymer can be readily tested using known test methods. The issue is not whether a specific polymer can be tested without undue experimentation. Rather, the issue is whether one can determine the full scope of polymer

charge transport materials that satisfy Expressions (1) and (2) without undue experimentation given the numerous potentially useful materials and the lack of guidance as to what and how specific polymer characteristics, synthesis conditions, etc. influence the properties related to Expressions (1) and (2).

With respect to applicant's remarks regarding the two references that were previously made of record but not relied upon, the examiner notes that US 2002/0182440 A1 discloses polymers represented by formulae set forth in the present application including present claims 5 and 6, and in the syntheses of these polymers, discloses that the polymers are "filtered and cleaned thoroughly" (see page 27, Synthesis Examples 1, 2 and 3). If purity is the sole factor determining whether polymers represented by formulae set forth in the present application meet Expressions (1) and (2), one might reasonably expect that the prior art devices which utilize the filtered and thoroughly clean polymers are within the scope of the present claims.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 7:00 a.m. to 3:30 p.m. Monday-Friday.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY
January 17, 2007

Marie R. Yamnitzky

MARIE YAMNITZKY
PRIMARY EXAMINER

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